

## REMARKS

It is respectfully submitted that the Section 102 rejections are manifestly improper and should be withdrawn. The three rejections of record are rejections under 35 U.S.C. 102 over each of Meyers et al., U.S. Patent 5,518,739; Yoshida et al., U.S. Patent 4,840,807; and Fouache et al., U.S. Patent 6,630,586. In summary, the rejections are improper:

- The Meyers and Fouache products are different from the product obtained in accordance with the present invention. This is established by the earlier-submitted Declaration of Dr. Mungara and by information contained *in the references themselves*.
- The Yoshida reference is limited to a product that contains alpha-1,4 and alpha-1,6 bonds. Contrary to the assertions of the Examiner in the last Office Action, the product of Yoshida indeed is different from the product obtained in accordance with the claimed invention.

The references are discussed in more detail below.

### Meyers

The Examiner has cited the Meyers '739 patent for its disclosure of the product FIBERSOL from Matsutani. It is noted that the Meyers reference, which is assigned to a chewing gum company, purports to disclose simply a use of FIBERSOL. Meyers is silent as to the method of preparation of FIBERSOL and is largely silent as to its properties. But Meyers does describe the digestibility of FIBERSOL, and, in so describing, he characterizes this product as "indigestible dextrin":

Indigestible dextrin, such as FIBERSOL from Matsutani, is classified by the USFDA for allowance in food as a maltodextrin because it generally meets the USFDA definition of a maltodextrin.

(Col. 3 ll. 15-18). Thus, Meyers et al. consider the FIBERSOL product to be an indigestible product. This is consistent with the results obtained by Dr. Mungara and is inconsistent with the characteristics of the claimed invention, also as reported by Dr. Mungara.

The Office Action states that the “FIBERSOL-2 used by Dr. Mungara does not prepare according to the prior art procedures, but was purchased. Thus, the products being compared to the present invention might or might not be the prior art products.” But in the Meyers, et al. reference itself, FIBERSOL is characterized as being a commercial product. Dr. Mungara’s purchased product is indeed comparable to the product described in the reference.

In any case, Meyers, et al. recognized FIBERSOL as being an indigestible product. The product of the claimed invention is not “indigestible” as reported by Meyers et al. Dr. Mungara confirmed this by demonstrating that the 4-hour digestibility data for FIBERSOL was about an order of magnitude less than the product of the claimed invention. The FIBERSOL product described by Meyers et al. is not the same as that of the claimed invention.

### **Yoshida**

The Yoshida reference discloses a method for fractionation. As the Examiner appears to recognize, this process does not create bonds, and, in the product of Yoshida, there will be nothing other than alpha-1,4 and alpha- 1, 6 bonds. This is in contradistinction of the present invention in which bonds other than alpha- 1,4 and alpha- 1,6 bonds are created in the extruder.

In the final Office Action, the Examiner asserted that “[t]he instant claims are not drawn to a product containing bonds other than alpha- 1,4 and alpha-1,6, so this argument is not relevant.” Applicants respectfully disagree. As stated in the specification at page 11, line 21 et seq, and as reported in the data of Dr. Mungara, the extrusion reaction specified by the claims of the present application will indeed create bonds other than alpha- 1,4 and alpha- 1,6. In the

extruder, new bonds are formed, and these bonds will not always be alpha- 1,4 and alpha- 1,6 bonds. The product of the present invention thus is innately distinct from the product described in the Yoshida patent.

**Fouache et al.**

The Fouache et al. reference, believed to describe the Nutriose product analyzed by Dr. Mungara, itself describes the properties of the disclosed material. Based on Fouache et al.'s description of the disclosed product and on the Mungara declaration, it is evident from this description that the product of the Fouache reference is different from the claimed invention.

The Examiner is respectfully referred to the Fouache reference at column 2, lines 45-61. In this section, Fouache discusses the "calorific value" of the product disclosed therein. Specifically, Fouache describes the product as having a calorific value lower than 2.5 kcal/g. Moreover, of this 2.5 kcal/g *in vivo*, much of this consists of an "indigestible fraction" (indigestible to enzymes) that is fermented bacterially in the large intestine. This "indigestible fraction" is indicated by Fouache to provide 2 kcal/g of the 2.5 kcal/g digestibility. The enzymatic digestibility, therefore, of the product Fouache is less than 0.5 kcal/g.

As is known in the art, the digestibility of an ordinary carbohydrate is generally given as 4 kcal/g. Accordingly, the digestibility of the product of Fouache is 0.5/4 or about 12.5%. This is entirely with the product evaluated by Dr. Mungara, in which he determined a 15% digestibility. The 4-hour digestibility of a fully digestible carbohydrate would be approximately 100%

Based on these teachings of Fouache et al., it is evident that the product of the present invention is different from that of the Fouache reference. The 4-hour digestibility of the products of the teachings of the claimed invention are in the 30-40% range. These products are different from the product disclosed by Fouache et al, which are stated to have a calorific value of 0.5 kcal/g via enzymatic digestion, or 12.5% digestibility, and a commercial sample of which

was found by Dr. Mungara to have a digestibility of 15%. Thus, the products of Fouache and of the claimed invention are different.

In light of the foregoing, withdrawal of the Section 102 rejections is required. Allowance is respectfully solicited.

Respectfully submitted,

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